



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

RB T101338-3
Job Sheet 166654



Part No: RB T101338-3

Job Qty: 6 ea

Part Name: Jack Screw



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 10/13/17

Job Tracking No:

Due Date: 11/10/17

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: T101338 REV C IPP Rev.A 17.08.01 New issue DP Verify DD IPP REV:B 17.12.05 ADDED DT10360 DD
VERF:DP

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	6 Ea		11/10/17	0.00	0.00	Start Up Large Fab-1		
110	Large Fab	6 pcs		11/10/17	0.00	0.00	Large Fab 1		
120	QC	6 pcs		11/10/17	0.00	0.00	QC9		
125	Outsource	6 pcs		11/10/17	0.00	0.00	Outsource3		Imp 22-12-17
126	Packaging	6 pcs		11/10/17	0.00	0.00	Packaging2		Imp 22-12-17
128	QC	6 pcs		11/10/17	0.00	0.00	QC6		BO-12
130	Packaging	6 pcs		11/10/17	0.00	0.00	Packaging3 GA		A-18-91-12
140	QC21-SA	6 Ea		11/10/17	0.00	0.00	QC21		

Part Op 110 - Weld as per dwg. Us DT10360 welding fixture.

Descriptions: 125 - -Issue P/O to Groupe Altech: P/O 038576 -Cadmium plating, QQ-P-416F TYPE II, CLASS II -Color; Yellow -
Certificate of Conformity is required

130 - Attach ID tag

DEC 18 2017

DAS
13
9-89

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	RB T101338-5	6	6	0	0
	RB T101338-7	6	3	0	0

Part Specifications

Specifications could not be found.

Plex 12/6/17 9:23 AM dart.lacelle.linda

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION		AGAINST DEPARTMENT/PROCESS							
	Rework	☐	Skid-tube	☐	Cross tube	☐	Water Jet	☐	Engineering	☐
	Scrap	☐	Machining	☐	Small Fab	☐	Prod. Eng. Coord.	☐	Quality	☐
	Use-as-is	☐	Thermoforming	☐	Finishing	☐	Rec/Store/Packaging	☐	Other	☐
	Suspected Unapproved	☐	Large Fab	☐	Composite	☐	Supplier	☐		

Date : _____

Descript

**S017434****Jack Screw****PART NO:****RB T101338 – 3****Revision:****Operation:****Outsource****Change No:****Dart Aerospace Ltd.**1278 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA

TEL: 1 613 632-5200

Email: sales@dartaero.com

www.dartaerospace.com

MRB (QS1042) Approval

Completed By

Lead hand / Supervisor
Approval VerificationQC / QA Coordinator
Approval

Root Cause

Environment	☐	No Re-vi	☐
Design	☐	Operato	☐
Doc/Data	☐	Offset/S	☐
Equip/Tooling	☐	Supplier	☐
Handling/Pre	☐	Training	☐
Material	☐	Use for Testing	☐
Internal Transport	☐	Poor Information	☐
Tribal Knowledge	☐	Rushing	☐
LOA	☐	Product Improvement	☐
Substation	☐	Process Improvement	☐
Past Expiry Date	☐	Manufacturing Process	☐
Misidentified	☐	Past Due	☐

Crimp/Kink/Ripple/Wave

Cuffs

Crushing

Heat Treat

Wave/Twist in Tube

Marks/Chatter

OTHER :

Inspection Incomplete/Unqualified

Contamination

Countersink

Cut Too Short

Instructions Incomplete/Unclear

Drill Holes

Mfg Date: 12/05/17**Job No: 166654**ss/Surge
gram

Wrong Stock Pulled

Out of Sequence

Off-set

Mislabeled

Fit/Function

Misaligned/off center

Positioned Wrong

Outside Dimensions

Over/Under tolerance

Part Incorrect

Part Lost/Missing

Part Moved

Drawing

Finish

Misread

Turning Sequence



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
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Canada

Tel (613) 632-5200

RB T101338-3
Job Sheet 166654



Part No: RB T101338-3

Job Qty: 6 ea

Part Name: Jack Screw



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 10/13/17

Job Tracking No:

Due Date: 11/10/17

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Type: Stock

Description:

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Due Date	Standard		Workcenter/Supplier	
				Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
90	Start up Operation	6 Ea	11/10/17	0.00	0.00	Start up container	
110	Large Fab	6 pcs	11/10/17	0.00	0.00	Large Fab 1	
120	QC	6 pcs	11/10/17	0.00	0.00	QC9	
130	Packaging	6 pcs	11/10/17	0.00	0.00	Packaging3	
140	QC21-SA	6 Ea	11/10/17	0.00	0.00	QC21	

Part Op 110 - Weld as per dwg.

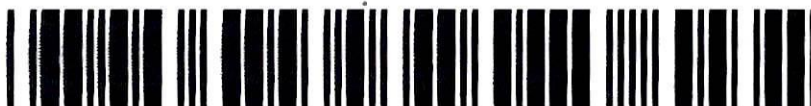
Descriptions: 130 - Attach ID tag

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	RB T101338-5	6	0	0	0
	RB T101338-7	6	0	0	0



S017434



Jack Screw

Dart Aerospace Ltd.

1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

e.marie

PART NO: RB T101338-3
Revision:
Operation: Start up Operation
Change No:

Mfg Date: 12/05/17

Job No: 166654

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																		
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																		
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																		
Large Fab ☐	Composite ☐	Supplier ☐																			

Date :	Step #:	QTY Effective :	MRB (QSI042) Approval
Description Work Order Deviation		Disposition	
		Completed By	
		Lead hand / Supervisor Approval Verification	
		QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		
OTHER : ☐							



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO038576**

Supplier: GRO002-VC
Group Altech
2455 Halpern
St Laurent
QC
H4S 1N9 Canada
Phone: 514-335-3666
Fax: 514-335-3868

PO No: PO038576

PO Date: 12/6/17

Due Date: 12/20/17

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Baker, Diane
dbaker@dartaero.com

E-MAILED

DEC 18 2017

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

DEC 18 2017

Items

Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	166654	RB T101338-3	Jack Screw -Issue P/O to Groupe Altech: P/O _____ -Cadmium plating, QQ-P-416F TYPE II, CLASS II -Color; Yellow - Certificate of Conformity is required	Firmed	12/20/17	6 pcs	0 pcs	6 pcs	\$25.00/pcs	\$150.00
2	168629	647.8511	Insert -Issue P/O to Groupe Altech: P/O _____ -Passivate, MIL-S-5002 TYPE 6 AS PER DWG - Certificate of Conformity is required	Firmed	12/20/17	10 pcs	0 pcs	10 pcs	\$4.545454/pcs	\$45.45
3	167623	SK145-0115-20	Clamp Bar ISSUE P/O: _____ PASSIVATE AS PER DWG ACCORDANCE WITH ASTM A967 C OF C IS REQUIRED	Firmed	12/8/17	12 pcs	0 pcs	12 pcs	\$4.545454/pcs	\$54.55
4	169330	8812827000	Extractor Black oxide finish, MIL-C-13924C Class 1	Firmed	12/20/17	10 pcs	0 pcs	10 pcs	\$10.00/pcs	\$100.00
5	169276	RBW6505G00831-3G-19	Swivel Base -Issue P/O to Groupe Altech: P/O _____ -Cadmium plating, QQ-P-416F TYPE II, CLASS II -Color; Yellow - Certificate of Conformity is required	Firmed	12/20/17	1 pcs	0 pcs	1 pcs	\$25.00/pcs	\$25.00

12/18/2017

PURCHASE ORDER

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
6	169118	RB6795635-1	Sleeve -Issue P/O to Groupe Altech; PO -Black oxide finish, MIL-C-13924C Class 1 -Certificate of Conformity is required	Firmed	12/20/17	2 pcs	0 pcs	2 pcs	\$10.00/pcs	\$20.00
										2x
										Grand Total: \$395.00

Order Notes

Procurement Quality Clauses
 A005 right of entry
 A012 chemical and physical test report
 A016 personnel qualification
 A017 raw material identification (as applicable)

A022 Apical Processing
 A024 process certifications
 A026 certification of material conformance

A041 quality management system
 A042 dart notification by supplier
 A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

CL

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22-12-17
ms



Certificat de Conformité / Certificate of Compliance

(005339-1)

2455, Rue Halpern | Saint-Laurent | Québec | H4S 1N9
 Tel: 514-335-3666 Fax: 514-335-3868
 www.groupaltech.com

Bon de Livraison / Packing Slip

005339- 1

Livré à / Ship to

DART AEROSPACE LTD
 1270 ABERDEEN STREET
 HAWKESBURY, ON, K6A1K7
 CANADA
 Tel.: 613-632-5200 Fax.:

Client / Customer:

DART AEROSPACE LTD
 1270 ABERDEEN STREET
 HAWKESBURY, ON, K6A1K7
 CANADA
 BUYER:

Date expédition Ship date		Créé Par Generated By	Transport / No de Compte Courier / Acc. No.	Bon de commande Client Customer Purchase Order No.					
20-Dec-2017		Jessie Boisvert		038576					
#Ligne Line#	No. de Série / # Pièce Part Number / Line Item Details Job # / Ref #	Description pièce(s)	CATG. U/M	Comm. /Ordered	Exp/ Shipped	Qté NC/ NC Qty	Qté Scrap/	À venir/ Back Order	
1	RBT101338-3 Rev.	RBT101338-3 01 -CAD YELLOW 500 [CADMIUM YELLOW 500] QQ-416, TYPE II, CLASS II: CADMIUM YELLOW ***	CADMIUM CH	6	6	0	0	0	
2	647.8511 Rev.	647.8511 01 -PASSIVATION-BICHROMATE [PASSIVATION BICHROMATE]	PASSIVATION CH	10	10	0	0	0	
3	SK145-0115-20 Rev.	SK145-0115-20 01 -PASSIVATION- #3 [PASSIVATION #3] SPÉC: ASTM A967 C OF C *** SPÉC: AS PER DRAWING ***	PASSIVATION CH	12	12	0	0	0	
4	881287000 Rev.	881287000 01 -OXIDE BLACK [OXIDE BLACK] MIL-C-13924: Black Oxide Coating ***	BLACK-OXIDE CH	10	10	0	0	0	
5	RBW6505G00831-3G-19 Rev.	RBW6505G00831-3G-19 01 -CAD YELLOW 500 [CADMIUM YELLOW 500] QQ-416, TYPE II, CLASS II: CADMIUM YELLOW ***	CADMIUM CH	1	1	0	0	0	
6	RB6795635-1 Rev.	RB6795635-1 01 -OXIDE BLACK [OXIDE BLACK] MIL-C-13924: CLASS 1 ***	BLACK-OXIDE CH	2	2	0	0	0	

Notes Additionnelles / Additional Notes

Epaisseur réelle
Actual Thickness

Inspecteur Qualité
Quality Inspector

Réçu par
Received By

JB

Nous certifions que les pièces énumérées ci-dessus ont été traitées en conformité avec votre commande et vos spécifications et rencontrent les exigences.
 Notre responsabilité financière et légale ne sera pas supérieure au montant de la facture issue.

We hereby certify that the parts listed above have been process in accordance with your purchase order and specifications and are in conformance with your requirements.
 Our financial and legal responsibility will not be higher than the amount of invoice.

******CERTIFICATE of CONFORMITY******

Customer:

Studio SL2

Purchase Order N°:

038541

Packing Slip N°:

W00# 31600

Part N°:

Serial N°:

Description:

D3952-3P.

Quantity:

10

Certification:

We hereby certify that:

1. The above listed items were manufactured, repaired and/or inspected in accordance with applicable drawings and/or specifications;
2. All work was accomplished in accordance with the Dart Aerospace Purchase Order;
3. Results of all inspections, chemical or physical tests, as well as other evidence, which shows the acceptability of raw materials, parts and/or assembly components are on file and available for inspection at any time.

Authority:

3m / 1 year shelf life.

APPROVAL:

Valerie Young

Signature:



Title:

office administrator

DATE:

Dec 11.17

IJ35-10
IJ35-20**Quick Links**

[3M Graphics Warranties](#)
[Technical Information Selector](#)
[Safety Data Sheets \(SDS\)](#)
[Flammability \(ASTM E84 Reports\)](#)
[Videos](#)

Product Description

- For Solvent, Eco-Solvent UV and Latex Inkjet Printing and Screen Printing
- 3.2-mil vinyl film

Product Features

- Available in gloss and matte finishes
- Pressure-sensitive adhesive
- Permanent
- Expected Performance Life of 5 years (unwarranted period for unprinted film with no graphic protection, applied to a flat, vertical, outdoor surface)

Recommended Types of Graphics and End Uses

- Short to long-term, indoor and outdoor promotional graphics
- Signs, trade show and point-of-purchase displays
- Exhibits and architectural applications

Graphic Protection

Graphic protection can improve the appearance, performance and durability of your graphic. Always use only the graphic protection options recommended in this Bulletin for this film.

- [3M™ Scotchcal™ Gloss Overlamine 8508](#)
- [3M™ Scotchcal™ Luster Overlamine 8509](#)
- [3M™ Scotchcal™ Matte Overlamine 8510](#)

Characteristics

These are typical values for unprocessed product. Processing may change the values.

Physical Characteristics

Characteristic	Value
Material	Vinyl
Film Color	White, opaque
Thickness	Without adhesive: 3.25 mil (0.081 mm) With adhesive: 4.0 mil (0.102 mm)
Adhesive	Pressure sensitive
Adhesive Color	Gray
Liner	Polycoated paper
Flammability	ASTM E84 reports: IJ35-10 and IJ35-20 , or go to the On-line Product Catalog at 3Mgraphics.com

3M™ Scotchcal™ Graphic Film

Application Characteristics

Characteristic	Value
Finished Graphic Application Recommendation	Surface type: Smooth, flat and simple curved surfaces Substrate type: Metal, rigid plastic and painted surfaces Application temperature: 40° – 100°F (4° – 38°C) air and substrate Application method: Dry
Temperature Range After Application	-59 °F to +192 °F (-50 °C to +90 °C) (not for extended periods of time at the extremes)
Graphic Removal	Permanent

Warranty Information

Warranty Coverage Overview

The warranty coverage for eligible graphics is based on the user both reading and following all applicable and current 3M Graphics Product and Instruction Bulletins. The warranty period for eligible graphics is as stated in the 3M Graphics Warranties Matrices at the time that the film was purchased. Information found at 3MGraphics.com/warranties includes:

- [3M Graphics Warranties Bulletin](#)
 - This bulletin contains information on limitations and exceptions, and warranty period reductions for 3M Graphics Warranties. The warranty period may be reduced and stipulations may apply for certain constructions, applications, and graphic exposures as covered in this Bulletin.
- [3M Graphics Warranties Selector](#)
 - Use this selector to search for your vertical warranty period by product type, ink type, film name, and/or ink/prINTER platform.
- [U.S. Desert Southwest Region Map](#)
 - Use this map of hot, arid desert areas to determine if you are subject to reduced warranted durabilities.

The warranties set forth in this Bulletin are made in lieu of all other express or implied warranties, including any implied warranty of merchantability, fitness for a particular purpose, or arising out of a course of dealing, custom, or usage of trade.

3M Basic Product Warranty

3M Graphics Products are warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in its applicable 3M Graphics Product Bulletin and as further set forth in the [3M Graphics Warranties Bulletin](#).

Limited Remedy

The limited remedy applicable to each warranty is addressed in the 3M Graphics Warranties Bulletin found at 3MGraphics.com/warranties.

Limitation of Liability

Except where prohibited by law, 3M SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO PURCHASER OR USER FOR ANY DIRECT (EXCEPT FOR THE LIMITED REMEDY PROVIDED IN THE 3M GRAPHICS WARRANTIES BULLETIN), INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LABOR, NON-3M MATERIAL CHARGES, LOSS OF PROFITS, REVENUE, BUSINESS, OPPORTUNITY, OR GOODWILL) RESULTING FROM OR IN ANY WAY RELATED TO 3M'S GRAPHICS PRODUCTS, SERVICES, or THIS BULLETIN. This limitation of liability applies regardless of the legal or equitable theory under which such losses or damages are sought.

Additional Limitations

See the 3M Graphics Warranties Bulletin at 3MGraphics.com/warranties, for terms, additional limitations of your warranty, if any, information on reduced warranties for different exposures, and limitations of liability.

Factors that Affect Graphic Performance Life

The actual performance life of a graphic is affected by:

- the combinations of graphics materials used.
- complete ink drying or curing.
- selection, condition and preparation of the substrate.
- surface texture.
- application methods.
- angle and direction of sun exposure.
- environmental conditions.
- cleaning or maintenance methods.

Graphics Manufacturing

CAUTION

Before using any equipment, always read the manufacturer's instructions for safe operation.

Inkjet Printing

Always read and follow the ink manufacturer's written instructions on usage.

- **Sheeted film:** When used on a flat-bed inkjet printer, sheeted film may produce printing defects.
- **Ink limiting:** The recommended maximum ink limit is 250%.
- **If sheeted or stacked graphics will be stored:** If you plan to store sheeted and stacked finished graphics for an extended period of times, leave an unprinted margin (about 1/4 inch) to allow for possible shrinkage before trimming the graphic.

Do not exceed the recommended total ink coverage for the ink series used on this film. Having too high a total physical ink amount on the film results in media characteristic changes, incomplete drying, overlamine lifting, and/or poor graphic performance.

Completely Dry Graphics

IMPORTANT NOTE

Incomplete drying or curing can result in graphic failure including curling, increased shrinkage and adhesion failure, which are not covered under any 3M Graphic Warranty.

See the ink's 3M Product and Instruction Bulletin for more details.

Screen Printing

Formulations and processing conditions can affect ink durability. Refer to the Product and Instruction Bulletins for your ink for limitations and proper usage.

Cutting

See [3M Instruction Bulletin 4.1](#) for Sheeting, Scoring and Film Cutting details.

Graphic Protection

Graphic protection may improve the appearance, performance and durability of the graphic. Click on the graphic protection options listed in Product Bulletin or see the [3M Graphics Market Product Catalog](#), for more information.

IMPORTANT NOTE

During installation, scratches may occur on films without graphic protection.

Application and Installation

In addition to other 3M Bulletins specified in this document, the following Bulletins provide details that you may need to successfully apply a graphic.

- [3M Instruction Bulletin 4.22](#). Hot and Cold Roll Lamination for 3M Overlaminates.
- [3M Instruction Bulletin 5.1](#) Select and Prepare Substrates for Graphic Application
- [3M Instruction Bulletin 5.19](#). Lamination, Application & Maintenance of Floor Graphics. Complete the Surface Preparation procedure found in this Instruction Bulletin prior to applying a graphic to a surface.
- [3M Instruction Bulletin 5.5](#) Application, General Procedures for Interior and Exterior Dry Application
- [3M Instruction Bulletin 6.5](#) Storage, Handling, Maintenance, and Removal of Films and Sheetings

Pressure-sensitive Adhesive

This film has a pressure-sensitive adhesive. It bonds to the surface even with light pressure and cannot be repositioned.

Maintenance and Cleaning

Use a cleaner designed for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline). See [3M Instruction Bulletin 6.5](#) for details.

Shelf Life, Storage and Shipping

Shelf Life

The shelf life is **never more than 2 years** from the date of manufacture on the original box.

If you process the film, the shelf life is changed to **1 year** from the processing date, but not later than the 2 year maximum from the manufacturing date.

Storage Conditions

- 90 °F (32 °C) maximum
- Out of sunlight
- Clean, dry area
- Original container
- Bring the film to print room temperature before using

Shipping Finished Graphics

Flat, or rolled printed side out on 5 inch (13 cm) or larger core. This helps prevent the liner, if used, from popping off.

Health and Safety



CAUTION

When handling any chemical products, read the manufacturer's container labels and the Safety Data Sheets (SDS) for important health, safety and environmental information. To obtain SDS sheets for 3M products go to 3M.com/SDS, or by mail or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturer's instructions for safe operation.

Bulletin Change Summary

For the most current 3M Technical Information available to successfully use this product, please view this Bulletin electronically and click on the blue underlined links to view the relevant documents.

Release J, NOV-2016:

- Updated Thickness. See "Physical Characteristics" on page 1.

3M Commercial
Solutions
3M Center
Building 220-12E-04
St. Paul, MN 55144-1000
Phone 1-888-328-3908
Web 3M.com/Graphics

3M Canada
PO Box 5757
London, ON N6A 4T1
1-800-265-1840
Fax 519-452-6245

3M México S.A. de C.V.
Av. Santa Fe No. 55
Col. Santa Fe, Del. Alvaro
Obregón
México D.F. 01210
General 5255-5270-0400
Fax 5255-5270-2277

3M Puerto Rico, Inc.
350 Chardon Avenue
Suite 1100
San Juan, PR 00918
General 787-620-3000
Fax 787-620-3018

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IJ35-10 IJ35-20

Quick Links

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- Exhibits and architectural applications

Graphic Protection

Graphic protection can improve the appearance, performance and durability of your graphic. Always use only the graphic protection options recommended in this Bulletin for this film.

- [3M™ Scotchcal™ Gloss Overlamine 8508](#)
- [3M™ Scotchcal™ Luster Overlamine 8509](#)
- [3M™ Scotchcal™ Matte Overlamine 8510](#)

Characteristics

These are typical values for unprocessed product. Processing may change the values.

Physical Characteristics

Characteristic	Value
Material	Vinyl
Film Color	White, opaque
Thickness	Without adhesive: 3.25 mil (0.081 mm) With adhesive: 4.0 mil (0.102 mm)
Adhesive	Pressure sensitive
Adhesive Color	Gray
Liner	Polycoated paper
Flammability	ASTM E84 reports: IJ35-10 and IJ35-20 , or go to the On-line Product Catalog at 3Mgraphics.com

3M™ Scotchcal™ Graphic Film

Application Characteristics

Characteristic	Value
Finished Graphic Application Recommendation	Surface type: Smooth, flat and simple curved surfaces Substrate type: Metal, rigid plastic and painted surfaces Application temperature: 40° – 100°F (4° – 38°C) air and substrate Application method: Dry
Temperature Range After Application	-59 °F to +192 °F (-50 °C to +90 °C) (not for extended periods of time at the extremes)
Graphic Removal	Permanent

Warranty Information

Warranty Coverage Overview

The warranty coverage for eligible graphics is based on the user both reading and following all applicable and current 3M Graphics Product and Instruction Bulletins. The warranty period for eligible graphics is as stated in the 3M Graphics Warranties Matrices at the time that the film was purchased. Information found at 3MGraphics.com/warranties includes:

- [3M Graphics Warranties Bulletin](#)
 - This bulletin contains information on limitations and exceptions, and warranty period reductions for 3M Graphics Warranties. The warranty period may be reduced and stipulations may apply for certain constructions, applications, and graphic exposures as covered in this Bulletin.
- [3M Graphics Warranties Selector](#)
 - Use this selector to search for your vertical warranty period by product type, ink type, film name, and/or ink/printer platform.
- [U.S. Desert Southwest Region Map](#)
 - Use this map of hot, arid desert areas to determine if you are subject to reduced warranted durabilities.

The warranties set forth in this Bulletin are made in lieu of all other express or implied warranties, including any implied warranty of merchantability, fitness for a particular purpose, or arising out of a course of dealing, custom, or usage of trade.

3M Basic Product Warranty

3M Graphics Products are warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in its applicable 3M Graphics Product Bulletin and as further set forth in the [3M Graphics Warranties Bulletin](#).

Limited Remedy

The limited remedy applicable to each warranty is addressed in the 3M Graphics Warranties Bulletin found at 3MGraphics.com/warranties.

Limitation of Liability

Except where prohibited by law, 3M SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO PURCHASER OR USER FOR ANY DIRECT (EXCEPT FOR THE LIMITED REMEDY PROVIDED IN THE 3M GRAPHICS WARRANTIES BULLETIN), INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LABOR, NON-3M MATERIAL CHARGES, LOSS OF PROFITS, REVENUE, BUSINESS, OPPORTUNITY, OR GOODWILL) RESULTING FROM OR IN ANY WAY RELATED TO 3M'S GRAPHICS PRODUCTS, SERVICES, or THIS BULLETIN. This limitation of liability applies regardless of the legal or equitable theory under which such losses or damages are sought.

Additional Limitations

See the 3M Graphics Warranties Bulletin at 3MGraphics.com/warranties, for terms, additional limitations of your warranty, if any, information on reduced warranties for different exposures, and limitations of liability.

Factors that Affect Graphic Performance Life

The actual performance life of a graphic is affected by:

- the combinations of graphics materials used.
- complete ink drying or curing.
- selection, condition and preparation of the substrate.
- surface texture.
- application methods.
- angle and direction of sun exposure.
- environmental conditions.
- cleaning or maintenance methods.

Graphics Manufacturing



CAUTION

Before using any equipment, always read the manufacturer's instructions for safe operation.

Inkjet Printing

Always read and follow the ink manufacturer's written instructions on usage.

- **Sheeted film:** When used on a flat-bed inkjet printer, sheeted film may produce printing defects.
- **Ink limiting:** The recommended maximum ink limit is 250%.
- **If sheeted or stacked graphics will be stored:** If you plan to store sheeted and stacked finished graphics for an extended period of times, leave an unprinted margin (about 1/4 inch) to allow for possible shrinkage before trimming the graphic.

Do not exceed the recommended total ink coverage for the ink series used on this film. Having too high a total physical ink amount on the film results in media characteristic changes, incomplete drying, overlamine lifting, and/or poor graphic performance.

Completely Dry Graphics

IMPORTANT NOTE

Incomplete drying or curing can result in graphic failure including curling, increased shrinkage and adhesion failure, which are not covered under any 3M Graphic Warranty.

See the ink's 3M Product and Instruction Bulletin for more details.

Screen Printing

Formulations and processing conditions can affect ink durability. Refer to the Product and Instruction Bulletins for your ink for limitations and proper usage.

Cutting

See [3M Instruction Bulletin 4.1](#) for Sheeting, Scoring and Film Cutting details.

Graphic Protection

Graphic protection may improve the appearance, performance and durability of the graphic. Click on the graphic protection options listed in Product Bulletin or see the [3M Graphics Market Product Catalog](#), for more information.

IMPORTANT NOTE

During installation, scratches may occur on films without graphic protection.

Application and Installation

In addition to other 3M Bulletins specified in this document, the following Bulletins provide details that you may need to successfully apply a graphic.

- [3M Instruction Bulletin 4.22](#). Hot and Cold Roll Lamination for 3M Overlaminates.
- [3M Instruction Bulletin 5.1](#) Select and Prepare Substrates for Graphic Application
- [3M Instruction Bulletin 5.19](#). Lamination, Application & Maintenance of Floor Graphics. Complete the Surface Preparation procedure found in this Instruction Bulletin prior to applying a graphic to a surface.
- [3M Instruction Bulletin 5.5](#) Application, General Procedures for Interior and Exterior Dry Application
- [3M Instruction Bulletin 6.5](#) Storage, Handling, Maintenance, and Removal of Films and Sheetings

Pressure-sensitive Adhesive

This film has a pressure-sensitive adhesive. It bonds to the surface even with light pressure and cannot be repositioned.

Maintenance and Cleaning

Use a cleaner designed for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline). See [3M Instruction Bulletin 6.5](#) for details.

Shelf Life, Storage and Shipping

Shelf Life

The shelf life is **never more than 2 years** from the date of manufacture on the original box.

If you process the film, the shelf life is changed to **1 year** from the processing date, but not later than the 2 year maximum from the manufacturing date.

Storage Conditions

- 90 °F (32 °C) maximum
- Out of sunlight
- Clean, dry area
- Original container
- Bring the film to print room temperature before using

Shipping Finished Graphics

Flat, or rolled printed side out on 5 inch (13 cm) or larger core. This helps prevent the liner, if used, from popping off.

Health and Safety

CAUTION

When handling any chemical products, read the manufacturer's container labels and the Safety Data Sheets (SDS) for important health, safety and environmental information. To obtain SDS sheets for 3M products go to 3M.com/SDS, or by mail or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturer's instructions for safe operation.

Bulletin Change Summary

For the most current 3M Technical Information available to successfully use this product, please view this Bulletin electronically and click on the blue underlined links to view the relevant documents.

Release J, NOV-2016:

- Updated Thickness. See "Physical Characteristics" on page 1.

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